

# Unfinished Business in Maternal and Child Nutrition

By MARJORIE M. HESELTINE, M.A.

PROGRESS in recent years makes it possible to talk now about unfinished business in maternal and child nutrition. Even though we lack precise measures of nutritional status, few people doubt that mothers and children, on the average, are in better nutritional condition today than they were 20 years ago. But the very size of our accomplishments makes it necessary to emphasize that there is unfinished business. Some people seem to think we can afford to forget about nutrition programs for mothers and children and turn our attention entirely to overfed adults and the chronically ill of all ages. I dissent. Let me tell you why.

First, there is the magnitude of the problem. As Dr. Martha Eliot, chief of the Children's Bureau, pointed out to the Association of State and Territorial Health Officers in 1952, this Nation is growing younger faster than it is growing older (1). Realizing that this statement was contrary to the prevailing impression, she went on to say that during the preceding decade, the population over 65 years of age had increased 37 percent but the population under 5 had grown by 55 percent.

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*Miss Heseltine is chief of the Nutrition Section, Division of Health Services, Children's Bureau, Social Security Administration. Since this paper is based on her address at the 1955 meeting of the Western Branch of the American Public Health Association, the illustrations are drawn largely from the western part of the country.*

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Because of improved maternal care, the 4 million babies that are born annually may be spared many of the hazards of delivery and early infancy. But their birth certificates carry no guarantee that they will receive the daily dietary allowances recommended by the National Research Council. If an infant is to get the food he needs for optimal growth (please note that I do not say maximal growth, a point I shall discuss later) under conditions that make for good physical and emotional development, parent education in nutrition must go on and on as long as women have babies. Then, too, there is sufficient indication that what happens during childhood has a bearing on health during adult life to warrant continuing attention to maternal and child nutrition if only for its long-range influence on health problems of later maturity, which are now so much in the limelight. Public health nutrition services should be directed toward the older age groups, but programs should continue to serve maternal and child health as well.

My colleagues in State child health and crippled children's programs offer another reason for urging no diminution in maternal and child nutrition work: Generalized undernutrition, they say, can still be found among children in the United States, and even cases of dietary deficiency disease are seen occasionally from cultural groups that have not shared in the widespread economic prosperity. It is true that we have to look much more sharply for instances of malnutrition than we once did, but those we see are all the more dis-

trussing in these prosperous times. The comments of a young nutrition trainee from a so-called underdeveloped country after she had taken part in a dietary survey among low-income rural families in the United States are pertinent here. In a personal letter to an understanding American friend, she wrote: "Speaking of diet, I believe that the poor people of these counties . . . have a diet more deficient than the poor of my country. In a large family of 8 members, one housewife here reported that they spent only \$5 a week for food. This whole family is ill, and no wonder. And like this family, there are others and others. I also have the impression that these people show a greater sadness because they see from so close the comforts that they would like to attain."

The task ahead in maternal and child nutrition falls into two main categories, as I see it. We need to know more, much more. We need to do more with what we already know, and even with hypotheses that we think may be confirmed by research.

### **Requirements for Optimal Health**

Of the many aspects of maternal and child nutrition that we need to know more about and to do more about, one is the matter of nutritional requirements for optimal health at all stages of development. In 1953 the Food and Nutrition Board of the National Research Council issued the third revision since 1943 of its Recommended Dietary Allowances (2). The ink was hardly dry on this revision before the recommendations for protein allowances during the first year of life were challenged as being unnecessarily liberal. A committee of the board is now reconsidering these recommendations, and the Academy of Pediatrics has appointed a committee on nutrition which will direct attention to the matter. These recommendations, which represent "nutrient levels selected to cover individual variations in a substantial majority of the population" and which must never be confused with minimal requirements for an individual, are sure to be revised again and again as research throws more light on nutritional needs.

We need to know much more about satisfac-

tory rates of growth in children. As two research workers said, we need to find the "answer to the important medical-nutritional question regarding the degree of conformity to a norm to be expected on the part of an otherwise healthy child" (3). Longitudinal studies, such as those now under way at the Colorado Child Research Council, have already given us a respect for individual differences (4).

Although it is not easy for Americans to give up our "bigger and better" concept, there are those who are impressed by the questions raised by Prof. R. A. McCance of London. He asks whether the attainment of large size through very rapid rates of growth is in the interests of optimal health either during childhood or in later life. The following statements from one of his lectures may whet your appetite to seek out his provocative papers on overnutrition and undernutrition (5): "Animal husbandmen have bred and fed their animals for rapid maturity and marketable qualities and political husbandmen have come near to doing the same for children. Curiously little work or thought has been devoted to a study of the desirable plane of nutrition for the different years of human endeavor."

### **Introduction of Solid Foods**

If infants are not expected to grow at ever more rapid rates, there may be some revision in our ideas about the time for introduction of solid foods into the diet. The Child Health Center at the University of Washington has pioneered in trying to discover whether there is any difference in the progress of babies given solids by the end of the fourth week and those not given solid foods until the age of 9 to 12 weeks. Two researchers at the center could not detect any significant difference in the development of the two groups of infants in their response to solid foods (6).

Another approach to this question was taken by a group of pediatricians. By means of questionnaires, they obtained information from more than 2,000 of their colleagues in all parts of the country (7). There was general recognition of the trend toward early introduction of solid foods, but as one pediatrician put it: "The major factors underlying the current

trend to earlier feeding of solid foods are more probably social than they are nutritional or medical." And in case anyone thinks that parents take their pediatrician's recommendations without demurring, you should know that 59 percent of the pediatricians reported that they "experienced considerable pressure on the part of the mothers for the early introduction of solid foods." The consensus was that there is no physiological basis for introducing solid foods before the age of 3 months.

### **For Healthy Teeth**

Still another aspect of maternal and child nutrition about which we need to know much more is the relation of nutrition to healthy teeth and to their resistance to caries. It seems to be well established that the development of structurally sound teeth is dependent on a supply of nutrients that have their source in the ingested food. The argument begins on the question of the effect of diet on the susceptibility to caries of the fully formed tooth. Many discussions have been devoted to that topic, but the net result, it seems to me, is that the proponents of the various schools of thought have become more convinced than ever of the validity of their evidence whereas neutrals have become only more confused.

Fortunately, research on this question continues, and the prospects of an answer become brighter through the use of such new tools as electron microscopy and radioactive tracer techniques. There is certainly some indication from recent studies that enamel is permeable both from the oral cavity and the bloodstream.

### **Diet and Pregnancy**

We need to know more about the relationship of diet preceding and during pregnancy to the well-being of the mother and infant. Teams of research workers in various medical centers have approached the study of nutrition during pregnancy quite differently and, as might be expected, have often failed to confirm each other's findings. Does that mean that we should no longer claim that what a woman eats during the maternity cycle is important? A question as direct as that was put by a nutri-

tion workshop participant last summer to a young obstetrician who had just reported that a large-scale study had failed to reveal major differences between the nutritional condition of women who had had good diets and those who had had poor diets during pregnancy. As this physician was known to be an expectant father, he was asked: "What are you advising your wife to eat?" Thereupon, the nutritionists listened to the kind of dietary recommendations that they wish every pregnant woman might receive from her physician. His study may not have shown that diets somewhat below prevailing standards of adequacy had had a deleterious effect; but he was well aware of other studies that had shown diet to be important, and he wanted his wife to have the benefit of the doubt.

There would seem to be some rather impressive evidence in regard to the consequences of drastic limitation of calorie intake during pregnancy. Studies in Chicago have shown that when the energy requirements of the pregnant woman are not met, storage of nitrogen in the form of protein does not proceed at a satisfactory rate (8). Other studies indicate that women who are underweight at the beginning of pregnancy and who fail to come within a normal range during the first two trimesters have a higher than average proportion of premature infants (9). Nevertheless, I have been told of a teaching hospital that has only recently abandoned the routine prescription of a 1,000-calorie diet for prenatal clinic patients. The woman who is given such slim rations is sometimes told that it is important to control the size of the fetus. Yet there is impressive evidence that a diet so restricted as to affect the weight of the infant is pretty sure to take its toll on the mother. Periods of famine do result in lower birth weights. They also are likely to impair the health of childbearing women.

### **Nutrition Education**

Thus far, I have dealt only with the need for extending our knowledge of nutritional requirements and with the importance of putting into practice the concepts that have been evolved by our most authoritative leaders. But in order to put into effect what we know about nutrition, we need to know more—much more—about the

people to whom nutritional programs are directed.

Nutrition education has come a long way since the days when the nutritionist was a feminine lone ranger, who prepared her own educational material (usually mimeographed, single spaced), jumped into her car, traveled across the State to a county where there might or might not be a public health nurse, rounded up a group to listen to her talk or watch a demonstration, got back into her car, and returned to the State office. In those days, the public health nurse was not expected to know anything about nutrition. If she strayed beyond underlining the appropriate paragraphs about diet in the pamphlet she handed to a parent, she did so at her own risk. Community organization, group dynamics, the consultant-consultee relationship—all these were concepts that she had never heard of. There was no thought given to modifying teaching about foods to fit cultural patterns, for the emphasis was on Americanization. If cream soups were accepted by middle income Anglo-Americans, it was assumed the sooner recently immigrated Mexican mothers learned to make cream soup the sooner they would evolve into 100-percent Americans.

Currently, nutrition enters into the daily activities of many kinds of public health workers. A large proportion of them are equipped by training and experience to deal effectively with the run-of-the-mill nutrition problems, although, of course, they recognize the need for technical assistance from a nutritionist—hopefully one who is accessible enough to give help when it is most desired. Increasingly, nutrition consultation is focused not on what is new in nutrition but on how to make what is old (and as far as we know still true) function in the lives of people. Maternal and child nutrition teaching has been profoundly influenced by the writings of such men as Aldrich, Senn, Richmond, and Spock. Good nutrition is viewed not as an end in itself but as one factor in the development of a sound body and a healthy personality.

Knowing what is considered an appropriate diet for a parturient woman and her infant and why certain values are attributed to certain foods is only the starting point for soundly

motivated education in maternal nutrition. Beyond this, we must understand the ways of life of the people whom we are trying to teach. In work with cultural groups that have different value systems from their own, public health workers have found a new ally in the anthropologist. A paper on midwife training by Dr. Isabel Kelly (10), an anthropologist with the United States Operations Mission to Mexico, provides the following illustration of how a health worker and a social scientist may cooperate in solving a problem:

In certain Mexican villages, the women were unwilling to drink water during the later months of pregnancy or to give either water or fruit juice to their babies. As a result, both mother and child were deprived of essential fluids, and the child did not get the necessary amounts of vitamin C. Dr. Kelly and a nurse midwife worked out this solution: an increase in consumption of the herb teas that are an accepted part of the diet of these people and addition of an ascorbic acid tablet to the tea before it is given to the babies. The women were quite willing to make these modifications in their habits.

Dr. Kelly does not suggest that the practices found in these villages will persist indefinitely; she merely points out how a practice may serve effectively for the present. As Dr. Cicely Williams, who has done maternal and child health work in many parts of the British Commonwealth, states in an article on nutrition (11), "Many of the customs recorded by social anthropologists are not (as commonly supposed) unalterable but can be replaced by more rational and advantageous behavior once the position has been explained and understood. Often one sees the term 'social and cultural customs' used to dignify habits which are merely the result of ignorance and carelessness."

### **Health Agencies and Research**

Not only can health departments do more about applying what is known in nutrition, they can also contribute to the knowledge that is to be translated into programs. I am not suggesting that health departments should embark singlehandedly on ambitious nutrition research projects; but I am suggesting that they can

cooperate with other agencies in mutually beneficial programs and that they can undertake modest factfinding activities on their own.

As an example of the former, I am thinking of a statewide study of food habits of families with children that was conducted by the New Mexico Department of Public Health and nutritionists in the New Mexico Agricultural Experiment Station (12). As a result of this study, the health department has a much sounder basis for its nutrition programs in behalf of children.

I could cite many examples of the latter, but I will mention only two. A district nutritionist in Florida, with help from the State health department, worked out a device for learning what some of the words that come trippingly on the tongues of prenatal clinic staff mean to the patients. She learned, among other things (13), that to some of the patients "nutrition" is "the man who lays out dead folks." We can well believe that clinicians and nurses in that part of Florida will no longer tell a prenatal patient to "talk to Miss C . . . about your nutrition." In a county health department in California, a Spanish-speaking nurse, with the encouragement of her supervisor and help from a State nutrition consultant, undertook to find out what the Mexican-American families in her district were eating. The data she obtained would not permit an easy generalization. There was as much disparity between low-income and prosperous families as would be found in an Anglo-American group.

In conclusion, let me emphasize that the unfinished business in maternal and child nutrition is to a large extent the business of all public health workers. Seek help from the nutritionists and complain long and loud when you can't

get it. But don't expect the nutritionist to do the job alone.

#### REFERENCES

- (1) Eliot, M.: Report on child health and welfare. Pub. Health Rep. 68: 183-187, February 1953.
- (2) National Academy of Sciences-National Research Council: Recommended dietary allowances. Publication 302. Washington, D. C., The Council, 1953, 36 pp.
- (3) Sontag, L. W., and Garn, S. M.: Growth. Ann. Rev. Physiol. 16: 37-50 (1954).
- (4) Washburn, A. H.: Why be interested in child growth and development. Child 16: 50-54, December 1951.
- (5) McCance, R. A.: Overnutrition and undernutrition. 1. Causes. 2. Effects. Lancet 265: 685-690; 739-745, October 3, 10, 1953.
- (6) Deisher, R. W., and Goers, S. S.: A study of early and later introduction of solids into the infant diet. J. Pediat. 45: 191-199, August 1954.
- (7) Butler, A. M., and Wolman, I. J.: Trends in the early feeding of supplementary foods to infants. Quart. Rev. Pediat. 9: 63-85, May 1954.
- (8) Oldham, H., and Sheft, B.: Effect of calorie intake on nitrogen utilization during pregnancy. J. Am. Dietet. A. 27: 847-854, October 1951.
- (9) Tompkins, W. T., Wiehl, D. G., and Mitchell, R. McN.: The underweight patient as an increased obstetrical hazard. Am. J. Obst. & Gynec. 69: 114-123, January 1955.
- (10) Kelly, I.: An anthropological approach to midwifery training in Mexico. Mexico, D. F., Institute of Inter-American Affairs, 1954, 11 pp. Mimeographed.
- (11) Williams, C.: Self-help and nutrition. Lancet 266: 323-330, February 13, 1954.
- (12) Hacker, D. B., and others: A study of food habits in New Mexico, 1949-1952. Agricultural Experiment Station, New Mexico College of Agriculture and Mechanic Arts, Bulletin 384. Las Cruces, N. Mex., The Station, 1954, 20 pp.
- (13) Collins, G. E.: "Do we really advise the patient?" J. Florida M. A. 42: 111-115, August 1955.

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